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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,847	10/30/2003	Simon Dodd	100200768-1	8098
22879	7590	04/18/2006	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			DO, AN H	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

31

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/696,847	DODD ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	An H. Do	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 and 20-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-18 is/are allowed.
- 6) ☒ Claim(s) 1-6, 20, 21, 23-25, 27, 28, 30, 31 and 33 is/are rejected.
- 7) ☒ Claim(s) 22, 26, 29, 32 and 34-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

The Amendment filed on 02 February 2006 has been acknowledged.

#### *Claim Objections*

1. Claims 25 and 31 are objected to because of the following informalities: the words "power buss" should be changed to --power bus--. Appropriate correction is required.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 and 20, 21, 23, 25, 27, 28, 30, 31 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Torgerson et al (US 6,309,053).

Torgerson et al disclose the following claimed features:

Regarding claim 1, a fluid ejection device (Figures 1-3) comprising: a first heater element (56 of array group 61); a second heater element (56 of array group 62) vertically spaced a first distance (Looking at Figure 3 a distance from array group 61 to array group 62) from the first heater element (56 of array group 61); a first drive transistor (81) associated with the first heater element (56 of array group 61) (column 3, line 65 to column 4, line 3); and a second drive transistor (82) associated with the second heater element (56 of array group 62) (column 3, line 65 to column 4, line 3), the second drive transistor (82) vertically spaced a second distance (Looking at Figure 1 a

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distance from transistor 81 to transistor 82) from the first drive transistor (81), the second distance being different than the first distance (Figure 1); and a power bus (Figure 6, element 85) electrically connected to contacts of the first drive transistor (81), and being a protective layer covering the contacts of the first drive transistor (Figures 1, 4 and 5, column 4, lines 3-64).

Regarding claim 2, wherein the first distance (Looking at Figure 3 a distance from array group 61 to array group 62) is greater than the second distance (Looking at Figure 1 a distance from transistor 81 to transistor 82).

Regarding claim 3, further comprising a primitive group of drive transistors including the first and second transistors (Figure 1 shows three transistors 81-83).

Regarding claim 4, wherein the first distance (Looking at Figure 3 a distance from array group 61 to array group 62) is less than the second distance (Looking at Figure 1 a distance from transistor 81 to transistor 82).

Regarding claim 5, further comprising a first primitive group of drive transistors (81) and an adjacent second primitive group of drive transistors (82), wherein the first primitive group comprises the first drive transistor (81) and the second primitive group comprises the second drive transistor (82).

Regarding claim 6, wherein the first distance is a heater element centerline-to-centerline spacing (centerline of heater elements 56), and the second distance is a transistor center-to-centerline spacing (centerline of transistors 81-83) (Figure 1).

Regarding claim 20, a fluid ejection device (Figures 1-3) comprising: a vertical column of firing heater elements (56 of array group 61) and a vertical column of

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associated drive transistors (81 of array group 61); wherein a first firing heater element (56 of array group 61) of the vertical column of firing heater elements is vertically separated centerline-to-centerline by a first distance from an associated first drive transistor (Figures 1 and 3); and an adjacent second firing heater (56) element of the vertical column of firing heater elements is vertically separated centerline-to-centerline by a second distance from an associated second drive transistor (Figures 1 and 3), wherein the first distance and second distance are different (Figure 1).

Regarding claim 21, further comprising: a primitive group (array 61) comprising a plurality of firing heater elements (56) of the vertical column of firing heater elements and a plurality of associated drive transistors (81) of the vertical column of drive transistors; wherein the primitive group comprises the first and second firing heater elements (56) and the associated first and second drive transistors (81).

Regarding claim 23, wherein the plurality of firing heater elements (56) of the primitive group (array 61) are uniformly spaced from each other by a distance  $V1$  and the plurality of drive transistors (81) are uniformly spaced from each other by a distance  $V2$ , the distance  $V2$  being less than  $V1$  (Figure 1).

Regarding claim 25, further comprising: a primitive group comprising the vertical column of firing heater elements (56) and the vertical column of drive transistors (81); a power bus (85) associated with the primitive group (array 61) and electrically connected to provide a common power source for all of the plurality of drive transistors (81); wherein the primitive group comprises the first and second firing heater elements (56)

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and the associated first and second drive transistors (81) (Figures 1, 4 and 5, column 4, lines 3-64).

Regarding claims 27, 30 and 33, wherein the plurality of firing heater elements (56) of the primitive group are uniformly spaced a distance  $V1$  (Looking at Figure 3 a distance from array group 61 to array group 62) and the plurality of drive transistors (81-83) are uniformly spaced a distance  $V2$  (Looking at Figure 1 a distance from transistor 81 to transistor 82), the distance  $V2$  being less than  $V1$  elements (Figure 1).

Regarding claim 28, wherein the power bus (85) has a perimeter defining an area, the plurality of drive transistors (81-83) each has contacts and the contacts of the plurality of drive transistors are all enclosed within the perimeter (Figures 1, 4 and 5, column 4, lines 3-64).

Regarding claim 31, further comprising: a first primitive group (array 61) comprising a first plurality of firing resistors (56) of the column of firing resistors and a first plurality of associated drive transistors (81) of the column of drive transistors; an adjacent second primitive group (array 62) comprising a second plurality of firing heater elements (56) of the column of firing heater elements and a second plurality of drive transistors (82) of the column of drive transistors; first and second electrical power buses (85), each power bus associated with the drive transistors of the first or second primitive group respectively and electrically connected to the first or second plurality of drive transistors of the respective first or second primitive group respectively and electrically isolated from the other power bus (Figures 1, 4 and 5, column 4, lines 3-64).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Torgerson et al (US 6,309,053) in view of Burke et al (US 6,102,528).

Torgerson et al disclose the claimed invention except for reciting the distance V1 provides a fluid ejection device resolution of 1200 dots per inch (column 4, lines 37-41).

Burke et al teach the distance V1 provides a fluid ejection device resolution of 1200 dots per inch (column 4, lines 37-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the distance V1 providing a fluid ejection device resolution of 1200 dots per inch, as taught by Burke et al into Torgerson et al, for the purpose of providing high resolution printing.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1-18 and 20-33 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

7. Claims 7-18 are allowed over prior arts as discussed in Applicant's Remarks filed on 02 February 2006.

8. Claims 22, 26, 29, 32 and 34-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claims 22, 26, 29 and 32 is the inclusion of the limitation of a fluid ejection device that includes primitive group having heating elements and transistors wherein the drive transistors of the primitive group are spaced more closely center line-to-centerline along the vertical column of drive transistors than the firing heater elements of the primitive group are spaced centerline-to-centerline along the vertical column of firing heater elements. It is this limitation found in the claims, as it is claimed in the combination of, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 34-36 is the inclusion of the limitation of a fluid ejection device that includes a first primitive group having heating elements and transistors and a second primitive group having heating elements and transistors, wherein: a lowermost drive transistor of the first primitive group is vertically spaced centerline-to-centerline a distance V3 from an uppermost drive transistor of the adjacent second primitive group; and the drive transistors of one of the first or second primitive groups are vertically spaced more closely than the distance V3. It is this limitation found in the claims, as it is claimed in the combination of, that has not been



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found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143.

The examiner can normally be reached on Monday-Friday (Flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AD  
April 14, 2006



An H. Do  
Examiner  
Art Unit 2853